

REMARKS

Applicants have noted and carefully studied the Examiner's comments and the cited art. Applicants respectfully traverse the rejections and request reconsideration. For the reasons set forth below, Applicants submit the claims are allowable as written.

Allowed Claims 31-37

Applicants thank the Examiner, and further acknowledge the continuing allowed status of claims 31-37.

Cancelled Claim 5

Applicants request the cancellation of claim 5 without prejudice.

Amended Claims

Applicants have amended claims 2, 4, 20 and 38.

Cited References

Fujimoto

Fujimoto is directed to a an image display control apparatus for displaying blended images on a television monitor by combining graphics data and motion picture video data that is read directly from DVD media (col. 5, lns. 3-7). Applicants submit that Fujimoto discloses the use of a RAM 103 that is used to store only graphics data and lacks any reference to any memory, including a frame buffer, that would store video data. Further, Fujimoto's figure element 100b is a read-only external DVD storage and as such does not provide the properties otherwise present and inherent in a frame buffer (col. 5, lns. 5-6).

MacInnis et al.

MacInnis et al. is directed to a graphics display system with unified memory architecture. MacInnis et al. describes a system using a memory request arbiter to perform scheduling of memory requests from different devices having different priorities and the arbiter provides access to memory by requesters that are sensitive to latency and do not have determinable periodic behavior (col. 1, ln. 63 – col. 2, ln. 5). MacInnis et al. discloses the tuning of memory

by a system designer where the memory includes both code and data (col. 4, lns. 1-9). Further, MacInnis et al. specifically identifies the differences between memory 28 and potential frame buffers where it states that the "display engine ... takes graphics information from memory and processes it for display. ... the display engine transfers the processed graphics information to memory buffers that are configured as line buffers ... [and] the line buffer may include a frame buffer" (col. 5, lns. 34-44). Applicants direct the Examiner's attention to buffer 59 in fig. 2 shown as part of the graphics display system 10 separate and apart from memory 28. As such, to the extent that MacInnis et al. discloses any memory allocation, such functionality is performed on a separate and distinct memory 28 that contains code and data, and a frame buffer, if used, is not responsive to a display engine such that the graphics display engine allocates a size of a first memory block of the single frame buffer and a size of a second memory block of the single frame buffer based on the needs of video data and graphics data.

Claims 3-11 and 14-19

The Office Action states: "Claims 3-11 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto, U.S. Patent 5,912,710, 6/1999, 348/445." (Office Action, pg. 2).

Independent Claim 4 (Amended)

Applicants have amended claim 4 as shown above. Applicants respectfully submit that Fujimoto does not disclose, teach or suggest Applicants' claimed subject matter, including, inter alia "a single *frame buffer* coupled to the graphics scaler and to the video scaler, the single *frame buffer* further comprises a first memory block and a second memory block, wherein the stream of video data is fetched from the first memory block and the stream of graphics data is fetched from the second memory block." (claim 4).

Applicants note that claim 4 was amended to include the limitations of claim 5 (now canceled) such that the first and second memory blocks are comprised within a single *frame buffer* as opposed to a single memory. Because Applicants are narrowing claim 4 by incorporating the limitations of claim 5, Applicants submit that no additional prior art search is necessary.

Applicants acknowledge the Office Action's statement that "Fujimoto fails to disclose the first and second memory blocks included in a frame buffer of a video graphics integrated

circuit,” (Office Action, pgs. 3). In addition, Applicants submit that Fujimoto fails to disclose a “... single *frame buffer* coupled to the graphics scaler and to the video scaler ...” As such, Applicants submit that Fujimoto fails to disclose, teach or suggest Applicants claimed subject matter including, inter alia, “a single *frame buffer* coupled to the graphics scaler and to the video scaler, the single frame buffer further comprises a first memory block and a second memory block, wherein the stream of video data is fetched from the first memory block and the stream of graphics data is fetched from the second memory block.” (claim 4).

Applicants note the definition of “frame buffer” as that “portion of memory [RAM] reserved for holding the complete bit-mapped image that is sent to the monitor. Typically the frame buffer is stored in the memory chips on the video adapter. In some instances, however, the video chipset is integrated into the motherboard design, and the frame buffer is stored in general main memory.” “frame buffer.” *Webopedia*. 2003. http://www.pcwebopaedia.com/TERM/f/frame_buffer.html (12 Aug. 2003).

In addition Applicants note that RAM memory is defined as “The working memory of the computer. RAM is the memory used for storing data temporarily while working on it, running application programs, etc. “Random access” refers to the fact that any area of RAM can be accessed directly and immediately, in contrast to other media such as a magnetic tape where the tape must be wound to the point where the data is.” “random access memory (RAM).” *Techdictionary.com*. 2003. <http://www.techdictionary.com/Action.Lasso> (12 Aug. 2003). As such, Applicants submit that a DVD media is neither RAM nor a frame buffer.

Further, Applicants note that Applicants’ claim 2 includes, inter alia, the allocating of “... a size of the first memory block of the single frame buffer and a size of the second memory block of the single frame buffer based on needs of the video data and the graphics data...,” (claim 2). Here, Applicants submit that the DVD media presented in Fujimoto, unlike RAM memory generally, is fixed and cannot be, nor does Fujimoto suggest that it is capable of being dynamically partitioned into different memory blocks based on any variable factors such as the needs of video data and graphics data. As such, Fujimoto does not disclose, teach or suggest Applicants’ claimed use of a single frame buffer in a manner such as claimed.

Further, Fujimoto’s disclosure of the use of a DVD media as the sole source of storage for supplying its video/graphics system, and the fact that the DVD information is essentially

fixed thereon, and as such, the video and graphics supplied therefrom is fixed, Fujimoto's design is incapable of Applicants' claimed subject matter which is not so limited, and whereby its frame buffer can be populated with graphics and video data from a variety of dynamic sources. As such, Fujimoto's design is incapable of the broad functionality available to Applicants' claimed subject matter not otherwise limited to a fixed DVD media format and the other inherent limitations associated with DVD media when compared to a frame buffer.

Dependent Claim 3

Applicants respectfully reassert the arguments made above regarding claim 4. In addition, Applicants also submit that because claim 3 depends from claim 4 (via claim 2), and as a dependent claim therefrom, claim 3 is allowable for at least the reasons claim 4 is allowable. Applicants further submit, argued in part at least immediate above, that claim 3 is also allowable in light of the presence of novel and non-obvious elements contained in claim 3 that are not otherwise present in claim 4.

Dependent Claim 6

Applicants respectfully reassert the arguments made above regarding claim 4. In addition, Applicants also submit that because claim 6 depends from claim 4, and as a dependent claim therefrom, claim 6 is allowable for at least the reasons claim 4 is allowable. Applicants further submit, argued in part at least immediate above, that claim 6 is also allowable in light of the presence of novel and non-obvious elements contained in claim 6 that are not otherwise present in claim 4.

Dependent Claim 7

Applicants respectfully reassert the arguments made above regarding claim 4. In addition, Applicants also submit that because claim 7 depends from claim 4, and as a dependent claim therefrom, claim 7 is allowable for at least the reasons claim 4 is allowable. Applicants further submit, argued in part at least immediate above, that claim 7 is also allowable in light of the presence of novel and non-obvious elements contained in claim 7 that are not otherwise present in claim 4.

Dependent Claim 8

Applicants respectfully reassert the arguments made above regarding claim 4. In addition, Applicants also submit that because claim 8 depends from claim 4, and as a dependent

claim therefrom, claim 8 is allowable for at least the reasons claim 4 is allowable. Applicants further submit, argued in part at least immediate above, that claim 8 is also allowable in light of the presence of novel and non-obvious elements contained in claim 8 that are not otherwise present in claim 4.

Dependent Claim 9

Applicants respectfully reassert the arguments made above regarding claim 4. In addition, Applicants also submit that because claim 9 depends from claim 4, and as a dependent claim therefrom, claim 9 is allowable for at least the reasons claim 4 is allowable. Applicants further submit, argued in part at least immediate above, that claim 9 is also allowable in light of the presence of novel and non-obvious elements contained in claim 9 that are not otherwise present in claim 4.

Dependent Claim 10

Applicants respectfully reassert the arguments made above regarding claim 4. In addition, Applicants also submit that because claim 10 depends from claim 4, and as a dependent claim therefrom, claim 10 is allowable for at least the reasons claim 4 is allowable. Applicants further submit, argued in part at least immediate above, that claim 10 is also allowable in light of the presence of novel and non-obvious elements contained in claim 10 that are not otherwise present in claim 4.

Dependent Claim 11

Applicants respectfully reassert the arguments made above regarding claim 4. In addition, Applicants also submit that because claim 11 depends from claim 4, and as a dependent claim therefrom, claim 11 is allowable for at least the reasons claim 4 is allowable. Applicants further submit, argued in part at least immediate above, that claim 11 is also allowable in light of the presence of novel and non-obvious elements contained in claim 11 that are not otherwise present in claim 4.

Dependent Claim 14

Applicants respectfully reassert the arguments made above regarding claim 4. In addition, Applicants also submit that because claim 14 depends from claim 4, and as a dependent claim therefrom, claim 14 is allowable for at least the reasons claim 4 is allowable. Applicants further submit, argued in part at least immediate above, that claim 14 is also allowable in light of

the presence of novel and non-obvious elements contained in claim 14 that are not otherwise present in claim 4.

Dependent Claim 15

Applicants respectfully reassert the arguments made above regarding claim 4. In addition, Applicants also submit that because claim 15 depends from claim 4, and as a dependent claim therefrom, claim 15 is allowable for at least the reasons claim 4 is allowable. Applicants further submit, argued in part at least immediate above, that claim 15 is also allowable in light of the presence of novel and non-obvious elements contained in claim 15 that are not otherwise present in claim 4.

Dependent Claim 16

Applicants respectfully reassert the arguments made above regarding claim 4. In addition, Applicants also submit that because claim 16 depends from claim 4, and as a dependent claim therefrom, claim 16 is allowable for at least the reasons claim 4 is allowable. Applicants further submit, argued in part at least immediate above, that claim 16 is also allowable in light of the presence of novel and non-obvious elements contained in claim 16 that are not otherwise present in claim 4.

Dependent Claim 17

Applicants respectfully reassert the arguments made above regarding claim 4. In addition, Applicants also submit that because claim 17 depends from claim 4, and as a dependent claim therefrom, claim 17 is allowable for at least the reasons claim 4 is allowable. Applicants further submit, argued in part at least immediate above, that claim 17 is also allowable in light of the presence of novel and non-obvious elements contained in claim 17 that are not otherwise present in claim 4.

Dependent Claim 18

Applicants respectfully reassert the arguments made above regarding claim 4. In addition, Applicants also submit that because claim 18 depends from claim 4, and as a dependent claim therefrom, claim 18 is allowable for at least the reasons claim 4 is allowable. Applicants further submit, argued in part at least immediate above, that claim 18 is also allowable in light of the presence of novel and non-obvious elements contained in claim 18 that are not otherwise present in claim 4.

Dependent Claim 19

Applicants respectfully reassert the arguments made above regarding claim 4. In addition, Applicants also submit that because claim 19 depends from claim 4, and as a dependent claim therefrom, claim 19 is allowable for at least the reasons claim 4 is allowable. Applicants further submit, argued in part at least immediate above, that claim 19 is also allowable in light of the presence of novel and non-obvious elements contained in claim 19 that are not otherwise present in claim 4.

Claims 2, 12-13 and 20-30

The Office Action states: "Claims 2, 12-13 and 20-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto, U.S. Patent 5,912,710, 6/1999, 348/445 and further in view of Alexander MacInnis et al., U.S. Patent 6,189,064, 2/2001." (Office Action, pg. 5).

Claims 2 and 21

Dependent Claim 2 (Amended)

Applicants have amended claim 2 as shown above. Applicants respectfully submit that neither Fujimoto or MacInnis et al. disclose, teach or suggest Applicants' claimed subject matter, whether considered alone, or in combination, including, inter alia,:

"... a size of the first memory block of the single frame buffer and a size of the second memory block of the single frame buffer based on needs of the video data and the graphics data, respectively, and wherein the video graphics display further comprises a controller operably coupled to the video scaler and the graphics scaler, wherein the controller provides control information to the video scaler and the graphics scaler, wherein scaling operations of the video scaler and the graphics scaler utilize the control information."

(claim 2).

As discussed above with regard to claim 1, claim 2 claims the allocating of "a size of the first memory block of the single frame buffer and a size of the second memory block of the single frame buffer based on needs of the video data and the graphics data..." (claim 2.) Applicants submit that the DVD media presented in Fujimoto, unlike RAM memory generally, is fixed and cannot be, nor does Fujimoto suggest that it is capable of being dynamically partitioned into different memory blocks based on any variable factors such as the needs of video data and graphics data. As such, Fujimoto does not disclose, teach or suggest Applicants' claimed use of a single frame buffer in a manner such as claimed.

Further, Applicants submit the cited to language of MacInnis et al. (col. 4, lns. 1-8), discusses memory being tunable by a system designer where the memory includes both code and data, and as such, Applicants submit that such memory is not Applicants' frame buffer (see Applicants' discussion of "frame buffer" with respect to claim 4 above). Further, MacInnis et al. specifically identifies the differences between memory 28 and potential frame buffers where it is stated that the "display engine ... takes graphics information from memory and processes it for display. ... the display engine transfers the processed graphics information to memory buffers that are configured as line buffers ... the line buffer may include a frame buffer" (col. 5, lns. 34-44). Applicants direct the Examiner's attention to buffer 59 in fig. 2 shown as part of the graphics display system 10 separate and apart from memory 28. As such, to the extent that MacInnis et al. discloses any memory allocation, such functionality is performed on a separate and distinct memory 28 that contains code and data, and a frame buffer, if used, is not responsive to a display engine such that the graphics display engine allocates a size of a first memory block of the single frame buffer and a size of a second memory block of the single frame buffer based on the needs of video data and graphics data. As least for such reasons above, Applicants submit that Fujimoto does not disclose, teach or suggest Applicants' claimed use of a single frame buffer in a manner such as claimed.

Further, Applicants respectfully submit that the Office Action uses improper hindsight reasoning by suggesting it would have been obvious to combine MacInnis et al. and Fujimoto to achieve Applicants', inter alia,

"a size of the first memory block of the single frame buffer and a size of the second memory block of the single frame buffer based on needs of the video data and the graphics data, respectively, and wherein the video graphics display further comprises a controller operably coupled to the video scaler and the graphics scaler, wherein the controller provides control information to the video scaler and the graphics scaler, wherein scaling operations of the video scaler and the graphics scaler utilize the control information."

(claim 2). where the Office Action, using impermissible hindsight, bases such arguments only upon the teaching or suggestion within Applicants' own disclosure. Applicants submit that there must be some suggestion or motivation, either in the reference itself, or in the knowledge of generally available to one of ordinary skill in the art, to modify the reference as described. Further, to the extent that the Office Action may rely on a position that modifications to

Fujimoto based on teachings from MacInnis et al. to meet the claimed invention would have been well within the ordinary skill of the art at the time Applicants' invention was made, because the references, and/or the knowledge of one skilled in the art, were individually known to those of skilled in the art, is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. Here, at least because MacInnis et al. does not disclose, teach or suggest memory allocation in conjunction with a frame buffer, or the content therein, Applicants submit that if one of ordinary skill in the art at the time of Applicants' invention were to read Fujimoto, such a person would not be in possession of Applicants' claimed subject matter.

In addition, Applicants also submit that because claim 2 depends from claim 4, and as a dependent claim therefrom, claim 2 is allowable for at least the reasons claim 4 is allowable. Applicants further submit, argued in part at least immediate above, that claim 2 is also allowable in light of the presence of novel and non-obvious elements contained in claim 2 that are not otherwise present in claim 4.

Dependent Claim 21

Applicants respectfully submit that neither Fujimoto or MacInnis et al. disclose, teach or suggest Applicants' claimed subject matter, whether considered alone, or in combination, including, inter alia,:

“... scaling the video data based on video data control information, and wherein scaling the graphics data further comprises scaling the graphics data based on graphics data control information.”

(claim 21).

Applicants respectfully reassert the arguments made above regarding claim 2. In addition, Applicants also submit that because claim 21 depends from claim 20, and as a dependent claim therefrom, claim 21 is allowable for at least the reasons claim 20 is allowable (See below). Applicants further submit, argued in part at least immediate above, that claim 21 is also allowable in light of the presence of novel and non-obvious elements contained in claim 21 that are not otherwise present in claim 20.

Claim 20

Independent Claim 20 (Amended)

Applicants have amended claim 20 as shown above. Applicants respectfully reassert the arguments made above regarding claim 2. Specifically, Applicants submit that, as discussed in relation to Applicants' claim 2 language, that neither Fujimoto nor MacInnis et al. disclose, teach or suggest, whether considered alone or in combination, the allocation of memory within a frame buffer containing video and graphics data.

Claim 22

Dependent Claim 22

Applicants respectfully reassert the arguments made above regarding claim 20. In addition, Applicants also submit that because claim 22 depends from claim 20, and as a dependent claim therefrom, claim 22 is allowable for at least the reasons claim 20 is allowable. Applicants further submit, argued in part at least immediate above, that claim 22 is also allowable in light of the presence of novel and non-obvious elements contained in claim 22 that are not otherwise present in claim 20.

Claim 23

Dependent Claim 23

Applicants respectfully reassert the arguments made above regarding claim 20. In addition, Applicants also submit that because claim 23 depends from claim 20, and as a dependent claim therefrom, claim 23 is allowable for at least the reasons claim 20 is allowable. Applicants further submit, argued in part at least immediate above, that claim 23 is also allowable in light of the presence of novel and non-obvious elements contained in claim 23 that are not otherwise present in claim 20.

Claims 13 and 24

Dependent Claim 13

Applicants respectfully reassert the arguments made above regarding claim 4. In addition, Applicants also submit that because claim 13 depends from claim 4, and as a dependent claim therefrom, claim 13 is allowable for at least the reasons claim 4 is allowable. Applicants further submit, argued in part at least immediate above, that claim 13 is also allowable in light of

the presence of novel and non-obvious elements contained in claim 13 that are not otherwise present in claim 4.

Dependent Claim 24

Applicants respectfully reassert the arguments made above regarding claim 20. In addition, Applicants also submit that because claim 24 depends from claim 20, and as a dependent claim therefrom, claim 24 is allowable for at least the reasons claim 20 is allowable. Applicants further submit, argued in part at least immediate above, that claim 24 is also allowable in light of the presence of novel and non-obvious elements contained in claim 24 that are not otherwise present in claim 20.

Claims 12 and 25

Dependent Claim 12

Applicants respectfully reassert the arguments made above regarding claim 4. In addition, Applicants also submit that because claim 12 depends from claim 4, and as a dependent claim therefrom, claim 12 is allowable for at least the reasons claim 4 is allowable. Applicants further submit, argued in part at least immediate above, that claim 12 is also allowable in light of the presence of novel and non-obvious elements contained in claim 12 that are not otherwise present in claim 4.

Dependent Claim 25

Applicants respectfully reassert the arguments made above regarding claim 20. In addition, Applicants also submit that because claim 25 depends from claim 20, and as a dependent claim therefrom, claim 25 is allowable for at least the reasons claim 20 is allowable. Applicants further submit, argued in part at least immediate above, that claim 25 is also allowable in light of the presence of novel and non-obvious elements contained in claim 25 that are not otherwise present in claim 20.

Claim 26

Dependent Claim 26

Applicants respectfully reassert the arguments made above regarding claim 20. In addition, Applicants also submit that because claim 26 depends from claim 20, and as a dependent claim therefrom, claim 26 is allowable for at least the reasons claim 20 is allowable. Applicants further submit, argued in part at least immediate above, that claim 26 is also

allowable in light of the presence of novel and non-obvious elements contained in claim 26 that are not otherwise present in claim 20.

Claim 27

Dependent Claim 27

Applicants respectfully reassert the arguments made above regarding claim 20. In addition, Applicants also submit that because claim 27 depends from claim 20, and as a dependent claim therefrom, claim 27 is allowable for at least the reasons claim 20 is allowable. Applicants further submit, argued in part at least immediate above, that claim 27 is also allowable in light of the presence of novel and non-obvious elements contained in claim 27 that are not otherwise present in claim 20.

Claim 28

Dependent Claim 28

Applicants respectfully reassert the arguments made above regarding claim 20. In addition, Applicants also submit that because claim 28 depends from claim 20, and as a dependent claim therefrom, claim 28 is allowable for at least the reasons claim 20 is allowable. Applicants further submit, argued in part at least immediate above, that claim 28 is also allowable in light of the presence of novel and non-obvious elements contained in claim 28 that are not otherwise present in claim 20.

Claim 29

Dependent Claim 29

Applicants respectfully reassert the arguments made above regarding claim 20. In addition, Applicants also submit that because claim 29 depends from claim 20, and as a dependent claim therefrom, claim 29 is allowable for at least the reasons claim 20 is allowable. Applicants further submit, argued in part at least immediate above, that claim 29 is also allowable in light of the presence of novel and non-obvious elements contained in claim 29 that are not otherwise present in claim 20.

Claim 30

Independent Claim 30

Applicants respectfully reassert the arguments made above regarding claim 4. Specifically, Applicants submit that, as discussed in relation to Applicants' claim 4 language,

that at least because Fujimoto's DVD media is wholly different than Applicants' claimed frame buffer.

Claim 38

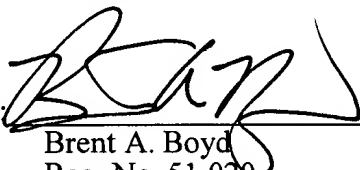
Independent Claim 38 (Amended)

Applicants have amended claim 38 as shown above. Applicants respectfully reassert the arguments made above regarding claim 4. Specifically, Applicants submit that, as discussed in relation to Applicants' claim 4 language, that at least because Fujimoto's DVD media is wholly different than Applicants' claimed frame buffer.

CONCLUSION

For the foregoing reasons, withdrawal of the rejections and allowance of the claims is respectfully requested. If there are any questions or comments regarding this response, the Examiner is encouraged to contact the undersigned at 312-609-7500.

Respectfully submitted,

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